

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently amended) A fluidless optical fiber assembly capable of deployment down an instrumentation tube located in a well bore, comprising:

a flexible tube having a lumen surrounded by a wall, the lumen having an inner diameter, the flexible tube also having an outer diameter smaller than an inner diameter of the instrumentation tube; and

an optical fiber having a core portion and a cladding portion disposed within the flexible tube, the optical fiber having an outer diameter smaller than an inner diameter of the lumen of the flexible tube, such that an entire length of the optical fiber intended to be deployed down the instrumentation tube fits within the lumen of the flexible tube without the inclusion of any ~~other material or~~ liquid between the optical fiber and the inner diameter of the lumen of the flexible tube, the flexible tube being hermetically sealed; and

a coating applied to an inner wall of the flexible tube for preventing permeation of fluid or gas through the flexible tube.

2. (Original) The assembly of claim 1, wherein the flexible tube is hermetically sealed.

3. (Canceled)

4. (Original) The assembly of claim 1, further comprising:

a coating applied to an outer surface of the flexible tube for preventing permeation of fluid or gas through the wall of the flexible tube.

5. (Original) The assembly of claim 4, wherein the coating is a material that reacts with hydrogen.

6. (Currently amended) The assembly of claim 2, wherein the inner wall of ~~the flex tube~~ flexible tube is coated with a hydrogen scavenging material.

7. (Currently amended) An optical fiber suitable for deployment in a harsh environment, comprising:

an optical fiber having core portion and a cladding portion; and

a flexible barrier material disposed and hermetically sealed about an outer diameter of the optical fiber for protecting the optical fiber from the harsh environment such that there is no ~~other material or~~ liquid disposed between the flexible barrier material and the outer diameter of the optical fiber; and

a hydrogen scavenging material applied to an inner wall of the flexible barrier material for preventing permeation of fluid or gas through the flexible barrier material.

8. (Original) The optical fiber of claim 7, wherein the flexible barrier is a thin tubing.

9. (Original) The optical fiber assembly of claim 7, wherein the flexible barrier encases the optical fiber, core portion and the cladding portion.

10. (Currently amended) The optical fiber assembly of claim 7, wherein the flexible barrier is made of a material that prevents the transmission of water vapor or gas from ~~the well~~ harsh environment into ~~in~~ the fiber.

11. (Original) The optical fiber assembly of claim 10, wherein the flexible barrier is made of stainless steel.

12. (Original) The optical fiber assembly of claim 10, wherein the flexible barrier is made of nickel steel.

13. (Original) The optical fiber assembly of claim 7, wherein the flexible barrier member further includes a drag enhancer attached to the flexible barrier, wherein the drag enhancer provides resistance to the flow of the optical fiber assembly during deployment.

14. (Original) The optical fiber assembly of claim 7, wherein the flexible barrier is hermetically sealed.

15. (Original) The optical fiber assembly of claim 7, wherein the flexible barrier further includes a hydrogen scavenging material.

16. (Previously presented) The optical fiber assembly of claim 8, wherein the flexible barrier includes a coating applied to an outer surface of the flexible barrier for preventing permeation of fluid or gas through the wall of the flexible barrier.

17. (Original) The optical fiber assembly of claim 16, wherein the coating is a material that reacts with hydrogen to form a molecule that cannot permeate the wall of the flexible barrier tube.

Claims 18-20. (Canceled)

21. (Previously presented) An optical fiber assembly for deployment down a capillary tube located in a well bore, comprising:

an optical fiber having a core portion and a cladding portion;

a flexible protective tube having an outside surface and an inside surface, the inside surface encasing the optical fiber along the entire length of the optical fiber intended to be deployed down the capillary tube such that there is no liquid between the inside surface of the flexible protective tube and the optical fiber, the flexible tube being hermetically sealed; and

a hydrogen scavenging material applied to the inside surface of the flexible tube for preventing permeation of fluid or gas through the flexible tube.

22. (Original) The optical fiber assembly of claim 21, wherein the hydrogen scavenging material is applied on the outside surface of the flexible tube.

Claims 23-24. (Canceled)

25. (Original) The optical fiber assembly of claim 21, wherein the optical fiber has a distal end having a drag enhancer mounted thereto.